

**I CLAIM:**

Sub 1. A driving assembly for controllably driving a slide with respect to a base including a rack, and at least a pinion engaging the rack and being driven by a controllable motor, said controllable motor having a motor shaft, a motor rotor and a motor stator, said rotor having a rotor shaft, the assembly comprising: said pinion forming a single body with said shaft of said motor, said shaft of said motor being rigid with a support element delimiting a circumferential chamber to provide a body of said support element with a U-shape cross-section, and end portions of said rotor shaft of said motor being supported by bearings engaged in recesses formed in cover elements rigidly coupled to a body of said motor stator.

2. The driving assembly, according to Claim 1, wherein said body of said support element extends from said stator radially toward the rotor shaft.

3. The driving assembly, according to Claim 1, wherein said rotor support element is rigidly coupled to said shaft by keying means.

4. The driving assembly, according to Claim 1, wherein the shaft of the rotor is coupled to a stem rigid with a rotary portion of a transducer.

5. The driving assembly, according to Claim 1, wherein said transducer has transducer outputs operatively coupled to digital controlling means.

6. The driving assembly, according to Claim 1, wherein said motor is a synchronous motor of high torque, and wherein said rotor comprises a multi-polar closed ring.

7. The driving assembly, according to Claim 1, wherein the cover elements are rigid with a casing of said stator.

8. The driving assembly, according to Claim 1, wherein said motor is a loose stator and rotor ring brushless motor, wherein the stator comprises a pack of stator laminations combined with stator coils, wherein said stator has a high number of stator poles, and wherein said rotor comprises a steel rotor ring in which a plurality of permanent magnet plates is embedded.

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